AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A security gate assembly comprising:

an elongate gate arm of sufficient length to impede the passage of a conventional automotive vehicle and movable along a defined pathway of travel;

a DC motor having an output shaft disposed to provide a torque upon receipt of a first series of output pulses;

a linkage mechanism attached to one end of said gate arm and to the DC motor output and disposed to cause rotation of the gate arm in accordance with the DC motor output; and

an adaptive control circuit disposed to monitor a plurality of operating conditions including signals related to motor output shaft position and to provide said first output pulses to said DC motor in response to the plurality of operating conditions.

2. (Original) The invention as in claim 1 wherein the adaptive control circuit is further disposed to provide second output pulses to cause counter-rotation of the gate arm.

3. (Currently Amended) The invention as in claim 1 wherein the motor output shaft position signals developed by the adaptive control circuit ~~is operable to develop a signal~~ are indicative of the position of the gate arm ~~and to vary the first output signals in accordance with said signal indicative of the position of the gate arm~~.

4. (Currently Amended) The invention as in claim 3 wherein said ~~signal indicative of the position of the gate arm is~~ motor output shaft position signals are developed by counting output pulses of the DC gear motor.

5. (Canceled) The invention as in claim 3 wherein the adaptive control circuit is further operable to receive data to provide the first output signals based on the weight of the gate arm.

6. (Currently Amended) The invention as in claim 1 wherein the adaptive control circuit senses based on the motor output shaft position signals, a relative position and speed of the gate arm as it traverses its defined pathway of travel.

7. (Previously Presented) The invention as in claim 6 wherein the adaptive control circuit provides an output signal to the DC motor to cause the gate arm to cease movement along the pathway of travel when a change in angular velocity is sensed.

8. (Canceled) The invention as in claim 1 wherein the linkage mechanism comprises a four-bar linkage member for coupling said DC motor output with said gate arm.

9. (Currently Amended) The invention as in claim 17 wherein said linkage mechanism further includes a ~~banana-shaped~~ curved link piece attached to both said DC motor output and said gate arm.

10. (Original) The invention as in claim 9 wherein the adaptive control circuit comprises a microprocessor and an object-oriented control program executing on said microprocessor.

11. (Previously Presented) The invention as in claim 10 wherein the object-oriented control program creates an instance of a motor controller class that specifies control parameters.

12. (Canceled) An object-oriented control system implementing a control program in a security gate including a gate arm and a motor operably connected thereto and adapted to be actuated and deactuated upon the receipt of a series of control pulses comprising:

a motor controller object implementing methods and data associated with a security gate;

a device handler object implementing methods data associated with input and output functions; and

a messaging object for permitting messages to be passed between the motor controller object and the device handler object.

13. (Canceled) The invention as in claim 12 wherein the motor controller object accesses one of a plurality of output voltage profiles for actuating the gate arm.

14. (Canceled) A linkage assembly for coupling a gate arm with an actuating motor comprising:

a reduction gear mechanism coupled with the actuating motor output;

a first link piece connected with the reduction gear mechanism;

a crank shaft operably connected with the gate arm having an axis of rotation spaced from the output axis of rotation; and

a second link piece operably connecting the first link piece with the crank shaft.

15. (Canceled) The invention as in claim 15 wherein the main crank passes through a centerline of the gate arm to permit connection in either a right-hand orientation or a left-hand orientation.

16. (Previously Presented) A security gate assembly comprising:

an elongate gate arm movable along a defined pathway of travel;

a DC motor having an output disposed to provide a torque upon receipt of a first series of output pulses;

a linkage mechanism attached to one end of said gate arm and to the DC motor output and disposed to cause rotation of the gate arm in accordance with the DC motor output; and

an adaptive control circuit disposed to monitor a plurality of operating conditions including data concerning the weight of the gate arm, and to develop a signal indicative of the position of the gate arm, said adaptive control circuit providing said first output pulses to said DC motor in response to the plurality of operating conditions including the weight of the gate

arm such that said first output pulses are varied in accordance with at least said signal indicative of the position of the gate arm and said data concerning the weight of the gate arm.

17. (Currently Amended) A security gate assembly comprising:

an elongate gate arm movable along a defined pathway of travel;

a DC motor having an output shaft disposed to provide a torque upon receipt of a first series of output pulses;

a linkage mechanism including a four-bar linkage member disposed to couple one end of said gate arm with the DC motor output and disposed to cause rotation of the gate arm in accordance with the DC motor output; and

an adaptive control circuit disposed to monitor a plurality of operating conditions including signals related to motor output shaft position and to provide said first output pulses to said DC motor in response to the plurality of operating conditions.

18. (Previously Presented) The invention as in claim 16 wherein said elongate gate arm is of sufficient length to impede the passage of a motor vehicle.

19. (Previously Presented) The invention as in claim 17 wherein said elongate gate arm is of sufficient length to impede the passage of a motor vehicle.

20. (Previously Presented) The invention as in claim 16 wherein the adaptive control circuit is further disposed to provide second output pulses to cause counter-rotation of the gate arm.

21. (Previously Presented) The invention as in claim 16 wherein the adaptive control circuit senses a relative position and speed of the gate arm as it traverses its defined pathway of travel.

22. (Previously Presented) The invention as in claim 21 wherein the adaptive control circuit provides an output signal to the DC motor to cause the gate arm to cease movement along the pathway of travel when a change in angular velocity is sensed.